AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A data writing apparatus for writing data into storage means, comprising:

~~an upper-rank~~a processor unit;

a first storage means, ~~where data to be written~~, wherein said first storage has a redundancy structure; and

a control unit which writes data in said first storage means in response to a command from said ~~upper-rank~~processor unit,

wherein the control unit ~~and~~ includes a second storage means,

~~second storage means,~~ and

a logical disk writing/reading means for writing data in said second storage means ~~data writing of which~~ when ~~at an address in said first storage means is~~ instructed by said ~~upper-rank~~processor unit and reporting completion of writing to said ~~upper-rank~~processor unit, wherein the processor instructs the writing of data and the control unit writes the data in said second storage means when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit ~~at said~~ corresponding to an address of the redundancy destruction of said first storage means.

2. (Currently Amended) The data writing apparatus according to claim 1, wherein said control unit further comprises a logical disk monitoring means which verifies if said redundancy destruction at said corresponding address of said first storage means has been recovered, and

when said logical disk monitoring means verifies that ~~said~~ redundancy ~~destruction~~ at said corresponding address of said first storage means has been recovered, said logical disk writing/reading means reads data written in said second storage means and writes said data at said corresponding address in said first storage means.

3. (Currently Amended) The data writing apparatus according to claim 2, wherein said logical disk monitoring means comprises:

a management table updating means which checks a status of said first storage means and updates a management table;

a timer which informs said management table updating means ~~of passage~~ of a lapse of a given time ~~when elapsed~~period; and

a write-enableness reporting means which reports recovery of said redundancy destruction at said corresponding address of said first storage means to said logical disk writing/reading means when said management table indicates ~~said~~ recovery of said redundancy ~~destruction~~.

4. (Currently Amended) The data writing apparatus according to claim 1, wherein said second storage means is a non-volatile storage means or a volatile storage means ~~having~~ which has an independent power supply.

5. (Currently Amended) The data writing apparatus according to claim 1, wherein said second storage means retains data written in said second storage means, by said control unit, until said data is written in said first storage means.

6. (Currently Amended) A data writing/reading apparatus for writing data into storage means, comprising:

~~an upper-rank unit~~a processor;

a first storage means ~~where data to be written~~which has a redundancy structure; and

a control unit which writes data in said first storage means in response to a command from said ~~upper-rank unit~~processor and includes

a second storage means, and

a logical disk writing/reading means for writing data in said second storage means ~~data writing of which at an address in said first storage means~~when ~~is~~ instructed by said ~~upper-rank~~processor unit and reporting completion of writing to said ~~upper-rank~~processor unit, wherein the processor instructs the writing of data and the control unit writes the data in said second storage means when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit ~~at said~~ corresponding to an address of the redundancy destruction of said first storage means, and reading the data from said second storage means ~~data for which~~when a command to read is received from ~~said address is given from~~ said ~~upper-rank unit~~processor. ~~when that data exists.~~

7. (Currently Amended) The data writing/reading apparatus according to claim 6, wherein said control unit further comprises a logical disk monitoring means which verifies if said redundancy ~~destruction~~ at said address has been recovered, and

when said logical disk monitoring means verifies that said redundancy ~~destruction~~ at said address has been recovered, said logical disk writing/reading means reads data written in said second storage means and writes said data at said address in said first storage means.

8. (Currently Amended) The data writing/reading apparatus according to claim 7, wherein said logical disk monitoring means comprises:

a management table updating means which checks a status of said first storage means and updates a management table;

a timer which informs said management table updating means of passage of a given time ~~when elapsed~~lapse; and

a write-enableness reporting means which reports recovery of said redundancy ~~destruction~~ at said address of said first storage means to said logical disk writing/reading means when said management table indicates said recovery of said redundancy. ~~destruction.~~

9. (Currently Amended) The data writing/reading apparatus according to claim 6, wherein said second storage means is a non-volatile storage means or volatile storage means ~~having~~ which has an independent power supply.

10. (Currently Amended) The data writing/reading apparatus according to claim 6, wherein said second storage means retains the data, which was written in the second storage means by said control unit, until said data is subsequently read from the second storage means by said control unit.

11. (Currently Amended) A data writing apparatus for writing data into storage means, comprising:

~~an upper-rank unit~~processor;

a first storage means, comprising redundancy structure wherein data and redundant data are ~~is~~ written ~~including data writing of which is~~when instructed by ~~an upper-rank unit~~a processor, ~~and redundancy data, and capable of,~~ if data of a size equal to or smaller than a size of said ~~redundancy~~ redundant data is destroyed, said first storage means ensuring data ~~writing from remaining data while~~ by repairing said data from remaining data~~writing of which is instructed, in response to a command from said upper-rank unit;~~

a control unit which writes data in said first storage means in response to a command from said ~~upper-rank unit~~processor and includes

a second storage means, and

logical disk writing/reading means for writing data in said second storage means ~~data for which a command to write at an address in said first storage means is given from said upper-rank unit and reporting completion of writing to said upper-rank unit, when writing is not possible due to an error during data correction in an area including said address.~~

when instructed by said processor unit and reporting completion of writing to said processor unit,

wherein the processor unit instructs the writing of data and the control unit writes the data in said second storage means when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit corresponding to an address of the redundancy destruction of said first storage means.

12. (Currently Amended) A method for writing data into storage means where data to be written has a redundancy structure, comprising the steps of:

A) when a redundancy destruction occurs at an address in ~~said~~ a first storage means, wherein the first storage means ~~where data to be written~~ has a redundancy structure, writing data in said second storage means data ~~writing of which at said address is~~ as instructed by ~~an upper rank unit~~a processor, said data corresponding to an address of redundancy destruction in said first storage means; ~~and~~

B) reporting completion of writing data in said second storage means to said ~~upper rank unit~~processor.

13. (Currently Amended) The method according to claim 12, further comprising the steps of:

C) verifying if ~~said~~ redundancy ~~destruction~~ at said address of said redundancy destruction of said first storage means has been recovered;

D) when recovery of said redundancy ~~destruction~~ is verified, reading data written in said second storage means; and

E) writing said data at said address in said first storage means.

14. (Currently Amended) The method according to claim 12, further comprising the steps of:

~~F~~C) checking a status of said first storage means when a given time elapses;

~~G~~D) updating a management table;

~~H~~E) reading data written in said second storage means when said management table indicates recovery of said redundancy ~~destruction~~; and

~~I~~F) writing said data at said address in said first storage means.

15. (Currently Amended) A method for writing and reading data into and from storage means where data to be written has a redundancy structure, comprising the steps of:

~~J~~A) when a redundancy destruction occurs at an address in ~~said~~ a first storage means, writing data in ~~said~~ a second storage means ~~data writing of which at said address is~~as instructed by an ~~upper rank unit~~processor;

~~K~~B) reporting completion of writing said data in said second storage means to said ~~upper rank unit~~processor; and

~~L~~C) ~~when there is data~~ reading data ~~of which from said address is~~corresponding to a redundancy destruction in the first storage means as instructed by said ~~upper rank unit~~processor.~~;~~ ~~reading said data from said second storage means.~~

16. (Currently Amended) The method according to claim 15, further comprising the steps of:

~~M~~D) when recovery of said redundancy ~~destruction~~ is verified, reading the data written in said second storage means and writing said data at said address in said first storage means.

17. (Currently Amended) The method according to claim 15, further comprising the steps of:

~~N~~D) checking a status of said first storage means when a given time elapses;

~~O~~E) updating a management table;

~~P~~F) reading data written in said second storage means when said management table indicates recovery of said redundancy ~~destruction~~; and

~~Q~~G) writing said data at said address in said first storage means.

18. (Original) A computer program capable of running on a computer so that the computer performs said steps of claim 12.

19. (New) A data writing apparatus that writes data into storage units, comprising:

a processor;

a first storage unit that includes a redundancy structure; and

a control unit that writes data in said first storage unit in response to a command from said processor unit,

wherein the control unit includes a second storage unit, and

a logical disk writing/reading unit that writes data in said second storage device, when instructed by said processor unit and reports completion of writing to said processor,

wherein the processor instructs the writing of data and the control unit writes the data in said second storage unit when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit corresponding to an address of the redundancy destruction of said first storage unit